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Building & Highway Material Testing Laboratory
An ISO 9001:2008 Certified Company
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JAS-ANZ
BSCIC
ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.14/AP/WMM/Gradation/2015-16

05.08.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Mr. A. Pradeep,** Contractor, Bangalore.

Name of Work : Improvements to roads & drain at 4th,5th,6th,7th,8th,10th & 11th Cross (Left & right side) 8th main road Bhuvaneshwari Nagara in Ward No.14, Bagalagunte, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 03.08.2015

Date of Testing : 05.08.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 7460

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	165	165	2.2	97.8	95-100
22.4	2650	2815	37.7	62.3	60-80
11.2	1295	4110	55.1	44.9	40-60
4.75	900	5010	67.2	32.8	25-40
2.36	815	5825	78.1	21.9	15-30
0.600	655	6480	86.9	13.1	8-22
0.075	690	7170	96.1	3.9	0-8

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Note:

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಟಿ.ದಾಸರಹಳ್ಳಿ ಉಪ-ವಿಭಾಗ
ಬಾಗಲಗುಂಟೆ, ಬಿಬಿಎಂಪಿ
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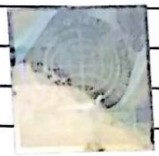
Job No.: CTCE/BBMP/W.No.14/AP/WMM/AIV/2015-16 05.08.2015

Aggregate Impact Value
IS: 2386 Part IV

Client	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Mr. A. Pradeep,** Contractor, Bangalore.
Name of the Work	Improvements to roads & drain at 4th,5th,6th,7th,8th,10th & 11th Cross (Left & right side) 8th main road Bhuvaneshwari Nagara in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 03.08.2015
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	05.08.2015



Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	380	381	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	80	81	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	300	
4	Aggregate Impact value = percent fines	21.05	21.26	
	100* (W_2/W_1)%			21.16

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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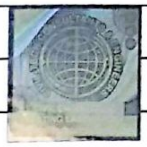
Job No.: CTCE/BBMP/W.No.14/AP/WMM/S-T/2015-16 05.08.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Mr. A. Pradeep,** Contractor, Bangalore.
Name of Work	Improvements to roads & drain at 4th,5th,6th,7th,8th,10th & 11th Cross (Left & right side) 8th main road Bhuvaneshwari Nagara in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 03.08.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	05.08.2015



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Result : Flakiness Index = **12.36%**

Elongation Index = **13.52%**

Result : Combined Flakiness & Elongation index 25.88%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

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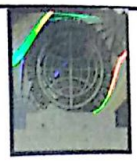

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Mr. A. Pradeep,** Contractor, Bangalore.

Name of Work : Improvements to roads & drain at 4th,5th,6th,7th,8th,10th & 11th Cross (Left & right side) 8th main road Bhuvaneshwari Nagara in Ward No.14, Bagalagunte, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 03.08.2015

Date of Testing : 05.08.2015

Material : WMM

Sample Location : WMM Mix Plant

As per MORTH Table 400-11

Sl. No.	Particulars	Test Results	Standards as per Specificaions
1	Liquid Limit, %	24.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CTCE/BBMP/W.No.14/AP/BM/Bitumen/2015-16 17.08.2015

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

AS per IRC:SP:-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. A. Pradeep,** Contractor, Bangalore.
NAME OF THE WORK	Improvements to roads & drain at 4th,5th,6th,7th,8th,10th & 11th Cross (Left & right side) 8th main road Bhuvaneshwari Nagara in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 03.08.2015
SAMPLE I/D	8th Main road Bhuvaneshwari nagara Ward No.14, BBMP, Bangalore.
DATE OF TESTING	17.08.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482.5	482
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	17.5	18.00
6. Weight of Bitumen Extracted, g. (corrected)	3.50	3.60
7. Bitumen content in %	3.55	
8. Average		

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Job No.: CTCE/BBMP/W.No.14/AP/BM/Bitumen/2015-16 17.08.2015

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	Mr. A. Pradeep, Contractor, Bangalore.
NAME OF THE WORK	Improvements to roads & drain at 4th,5th,6th,7th,8th,10th & 11th Cross (Left & right side) 8th main road Bhuvaneshwari Nagara in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 03.08.2015
SAMPLE I/D	8th Main road Bhuvaneshwari nagara Ward No.14, BBMP, Bangalore.
DATE OF TESTING	17.08.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1 Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Specified Limits as per MORTH specification table 500-04 (Grading-2)
26.5	0	0	0	100	100
19	42.25	8.76	8.76	91.24	90-100
13.2	89.65	18.58	27.34	72.66	56-88
4.75	261.1	54.11	81.45	18.55	16-36
2.36	39.22	8.13	89.58	10.42	4-19
0.3	20.2	4.19	93.77	6.23	2-10
0.075	19.23	3.99	97.75	2.25	0-8

Þ The results indicated above are based on the tests carried	Trail 2 Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Specified Limits as per MORTH specification table 500-04 (Grading-2)
26.5	0	0	0	100	100
19	33.22	6.89	6.89	93.11	90-100
13.2	89.95	18.66	25.55	74.45	56-88
4.75	261.3	54.21	79.77	20.23	16-36
2.36	50.24	10.42	90.19	9.81	4-19
0.3	15.87	3.29	93.48	6.52	2-10
0.075	7.25	1.50	94.99	5.01	0-8

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os: CTCE/BBMP/W.No.14/AP/SDBC/Bit/2015-16 — 18.08.2015

TUMEN CONTENT GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

ENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
ENCY	**Mr. A. Pradeep,** Contractor, Bangalore.
ME OF THE WORK	Improvements to roads & drain at 4th,5th,6th,7th,8th,10th & 11th Cross (Left & right side) 8th main road Bhuvaneshwari Nagara in Ward No.14, Bagalagunte, BBMP, Bangalore.
EFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 03.08.2015
AMPLE I/D	8th Main road Bhuvaneshwari nagara Ward No.14, BBMP, Bangalore.
DATE OF TESTING	18.08.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	26.36	5.55	5.55	94.45	90-100
4.75	259.6	54.65	60.20	39.80	35-51
2.36	54.36	11.44	71.65	28.35	24-39
1.18	30.25	6.37	78.01	21.99	15-30
0.3	36.32	7.65	85.66	14.34	9-19
0.075	42.52	8.95	94.61	5.39	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	36.32	7.66	7.66	92.34	90-100
4.75	261.3	55.13	62.79	37.21	35-51
2.36	32.26	6.81	69.59	30.41	24-39
1.18	37.52	7.92	77.51	22.49	15-30
0.3	35.26	7.44	84.95	15.05	9-19
0.075	45.65	9.63	94.58	5.42	3-8

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